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ABSTRACT

The relationships of Ohio's canals to drainage patterns, population centers, commerce and population growth are the focus of this unit for secondary school classes. Presented are both a student workbook and teacher's guide. Included in the latter are a materials list, objectives, suggested instructional approaches, evaluation items, and a key to questions in the student workbook. (WB)

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Ohio Sea Grant

OEAGLS- Oceanic Education Activities for Great Lakes Schools

OHIO CANALS

by

Victor J. Mayer, The Ohio State University

and

Frank Pigman, Madison Public Schools

Ohio Sea Grant Program
Charles E. Herdendorf, Program Director
Victor J. Mayer, Principal Investigator

SE 035 147

OEAGLS INVESTIGATION #15

Completed May, 1980

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INVESTIGATION

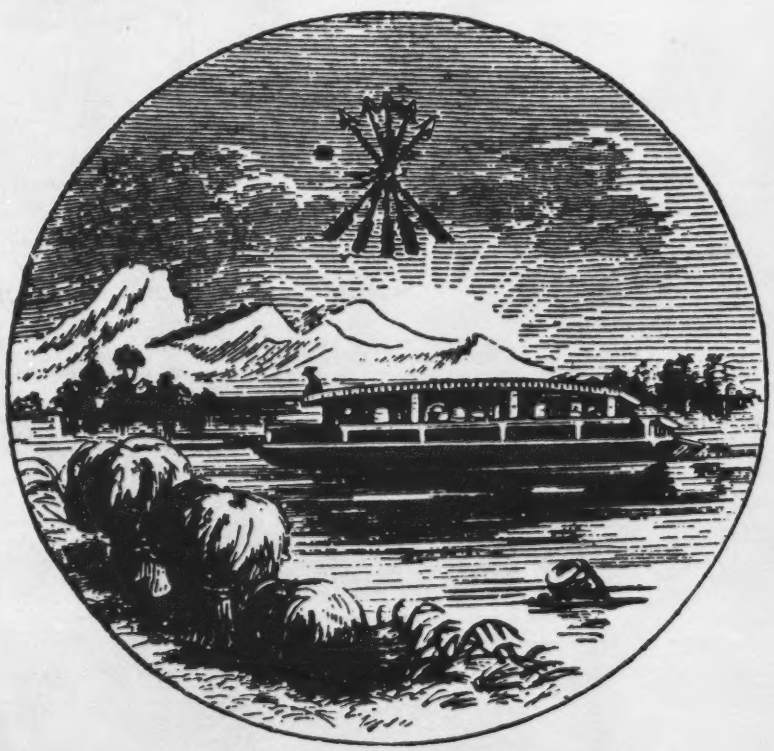
OHIO CANALS

INTRODUCTION

The population of Ohio reached over 600,000 in the early 1800's, yet the state remained one of the poorest in the Union. Ohio was primarily an agricultural state. Its farmers lacked good ways of getting products to the East where the major population centers of the young nation were located. In 1825, a barrel of flour sold in Ohio brought $1.95. In New York City the same barrel of flour was worth $8.00. For Ohio's economy to prosper, a way had to be found to deliver the agricultural goods to cities such as New York.

The completion of the Erie Canal through New York State in 1824 provided the towns along Lake Erie such as Buffalo, N.Y., and Cleveland, Ohio, with a way to move their products to the East. But how could produce from the interior part of Ohio be transported north to the lake? Ideas for a canal to link Cleveland with Columbus, the state capital, and Portsmouth on the Ohio River, began to materialize. People in other areas of the state wanted canals also. If a canal were available, it would cost the farmer $1.80 to ship that barrel of flour to New York. This would provide an increase in profit of over $4.00. No wonder there was such interest in digging canals in Ohio!

How were the routes for the canals determined? What effect did they have upon the economy of Ohio and of the towns along their paths?



The Ohio Coat of Arms
1866

OBJECTIVES

When you have finished this investigation you will be able to:

1. Tell the reasons for the location of the two major canals in Ohio.

2. Discuss the flow of products along the canals and into the nation's markets.

3. Describe the impact of the canals on Ohio's economy and population.

ACTIVITY A

HOW WERE THE CANAL ROUTES DETERMINED?

MATERIALS

One copy of the map entitled "Principal Streams and their Drainage Areas," published by the Ohio Department of Natural Resources; two different colors of washable marker pens.

PROCEDURE

Two reasons were most important in locating the canals in Ohio. First, canals had to serve the largest population and industrial centers. Second, they had to take advantage of natural waterways such as streams. Following streams helped to reduce the amount of digging, since streams go around hills and usually have gentle slopes. They also guaranteed a supply of water for the canal. The first canal completed was the Ohio-Erie. It served the population centers of Cleveland, Columbus and Portsmouth.

1. Using your marker pen, trace out what you think would be the best route for the Ohio-Erie Canal. Write down your reasons for choosing this route.

_____

_____

_____

_____

2. The Miami-Erie Canal was to serve the cities of Toledo, Dayton and Cincinnati. Trace out a route for the Miami-Erie Canal. Write down your reasons for choosing that route.

_____

_____

_____

_____

3. Your teacher will provide you with a map of the actual canal routes. Using a different color of pen, trace out the actual routes followed by the two canals. Also, trace the routes of other canals constructed in Ohio.

4. Where do your routes differ from those actually chosen by the canal builders?

_____

Examine your map in these regions. Can you think of any reasons why the canal builders chose routes other than those you chose?

_____

A drainage divide is high land that separates the areas drained by two different streams or rivers.

5. Locate Grand Lake and Buckeye Lake. Both are reservoirs built at the time of the canals. Note their location and the location of the drainage divides. Why do you think these two lakes were built?

_____

_____

6. There are other lakes along the route of the canals that served the same purpose. Name some of them.

_____

_____

7. At what types of places do you think the canal builders had the greatest difficulty in building the canals? Why?

_____

_____

ACTIVITY B

HOW DID THE CANALS AFFECT OHIO?

MATERIALS

The map used in Activity A, four additional markers and a map of the United States.

PROCEDURE

Because the canals made it easier for people to travel and ship materials, they had an effect upon many of the cities in Ohio. Figure 1 lists percentage of population increases during 10-year time-spans for several of Ohio's cities. For example, the population of Chillicothe increased by 79% during the decade 1840-1850. At the bottom of Figure 1 are several events that happened during particular decades.

DECADES	1820-1830	1830-1840	1840-1850	1850-1860	1860-1870	1870-1880
Chillicothe	17	40	79	7	17	23
Cleveland	44	82	64	61	53	42
Columbus	---	60	66	4	41	39
Portsmouth	102	88	101	56	69	7
Mansfield	---	37	63	22	43	19
Marietta	---	33	75	27	17	42
Cincinnati	61	87	149	48	34	18

EVENTS

- Erie Canal in New York and the southern part of Miami Canal complete
- Ohio-Erie Canal complete in 1832
- North part of Miami Canal complete
- Railroads widespread in Ohio by 1860

Figure 1. Population Growth of Certain Ohio Cities.

Find each of the cities on your map of Ohio. Were any located on canals? If so, which ones? Are any located on Lake Erie or the Ohio River?

Examine the population changes for each of the cities (Figure 1). Then answer the following questions:

1. What reasons can you think of for the way Chillicothe grew between 1820 and 1860?

_____

_____

2. Did the opening of the Ohio-Erie canal seem to have any effect upon the population growth of Cleveland? Explain.

_____

_____

3. During what period of time did Columbus grow most rapidly?

_____

What might have caused this growth?

_____

4. Could the canals have had any effect upon the growth of either Mansfield or Marietta? Discuss.

_____

_____

5. Describe the growth of Cincinnati. Does it seem to be related to the canals? Discuss.

_____

_____

6. There are many things other than the opening of transportation routes that could affect the growth of cities. Can you think of any? List them below.

_____

_____

_____

Which of these might have affected any of the cities above?

_____

_____

Because canals eased the movement of products from place to place, certain cities were able to specialize in types of products. This increased the dependence of cities upon each other. Raw materials would be produced at one place along the canal. They would be taken to another city to be used in manufacturing. The canals also allowed products to be shipped to other states and even to foreign countries.

Figure 2 lists four cities and the products they specialized in during the 1825-50 period.

Cincinnati	Cleveland	Troy	New Philadelphia
pork packing	beer	lumber	wood
container-making	iron machinery	hogs	grain
clothing	flour	grain	meat and dairy products
liquor	ship-building		

Figure 2: Products of Ohio Cities during 1825-1850.

7. Locate Cincinnati and Troy on the Miami-Erie Canal. Draw arrows along the canal from Cincinnati in the direction that its products might move. Use a different colored pencil and do the same for Troy.

8. In what ways might the lumber shipped from Troy be used in Cincinnati?

_____

_____

_____

9. Where else do you think Cincinnati's products might have been sent? Use a map of the U.S. to answer this question. Describe the route that might be taken by these products.

_____

_____

_____

10. Now locate Cleveland and New Philadelphia on the Ohio-Erie Canal. Draw arrows indicating the movement of materials between the two cities.

11. What were some of the uses made of grain that was shipped from New Philadelphia to Cleveland?

_____

_____

_____

12. Where else do you think Cleveland's products might have been shipped? Again use the map of the U.S. Describe the route that might be taken by these products.

_____

_____

_____

13. Of the four cities in Figure 2, which two manufactured materials? Which two cities produced materials used in manufacturing?

_____

_____

After Ohio's products reached an ocean port they could be shipped anywhere in the world. Ohio's canals, therefore, opened Ohio to the world markets. They also allowed the importation of foreign products.

REVIEW QUESTIONS

1. List the major towns connected by the Ohio-Erie Canal

_____

the Miami-Erie Canal.

_____

2. What major reasons were used for locating the canals?

_____

_____

3. How did the canals affect the population growth of certain cities?

_____

_____

_____

4. Explain how the canals lead to specialization of the products supplied by different areas or towns in Ohio.

_____

_____

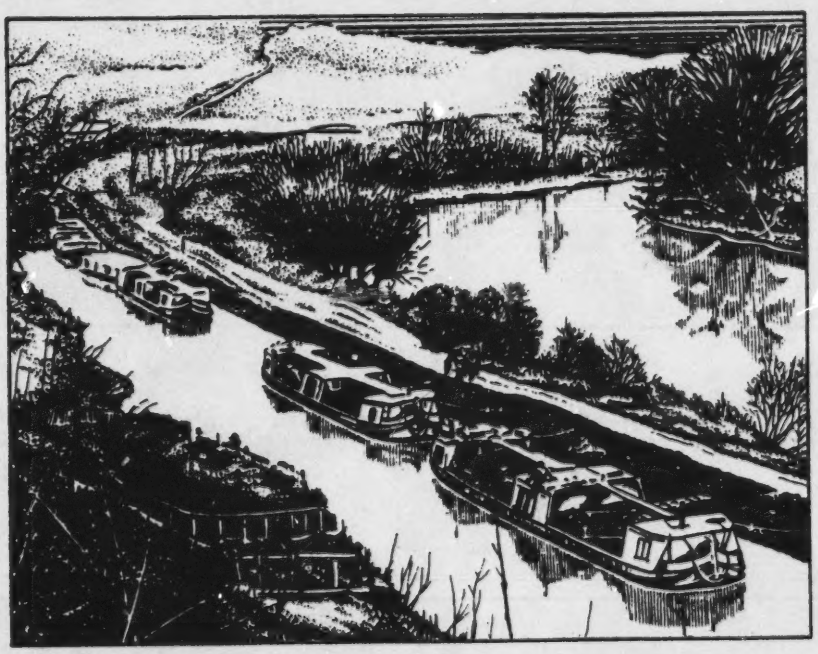
_____

5. How did the canals tie Ohio towns into world markets?

_____

_____

_____



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TEACHER GUIDE

OEAGLS INVESTIGATION #15

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OVERVIEW

Using a map of the drainage systems of Ohio and a knowledge of the location of principal population centers in the 1800's, students determine the preferable location of two of Ohio's canal systems. In the second activity they use data on population growth and commodities produced in certain locations in the state to determine the effects of the canals upon population growth and commerce.

PREREQUISITE STUDENT BACKGROUND

Students should be able to read a map showing the principal rivers and streams of Ohio. They should also understand percentage and the meaning of percent change in a variable such as population.

MATERIALS

The following will be needed by each group of students:

1. A copy of the map entitled Principal Streams and Their Drainage Areas. This is available from the Division of Water, Ohio Department of Natural Resources, Fountain Square, Columbus, OH 43224. For use in the investigation, the map will need to be covered with a sheet of plastic. Some schools have laminating machines available that will coat maps with plastic.

2. Six different colors of marking pens that use water soluble ink. These can be shared among groups to reduce the total number of pens.

You should also make available to the class, after completion of Activity A, a copy of a map of the canal routes in Ohio. One is included as Appendix A in this Teacher Guide.

OBJECTIVES

When the students have finished this investigation they will be able to:

1. Tell the reasons for the location of the two major canals in Ohio.

2. Discuss the flow of products along the canals and into the nation's markets.

3. Explain the impact of the canals on Ohio's economy and population.

SUGGESTED APPROACH

Students can work individually on this activity if there are enough materials available. Otherwise, they should work in groups of two.

The activity could be followed by a showing of filmstrips from the set Ohio's Canal Era, Cinemark Productions, 1761 Karg Drive, Akron, OH 44313. Part one deals with the overall history of the Ohio canal system and how it affected the growth of Ohio's population and economy. Part two explores the route of the Ohio-Erie canal and its affect on various cities along its route. Part three provides a similar treatment for the Miami-Erie Canal.

There are many sites around Ohio where portions of the old canals can be found and where the remnants of lock systems can be observed. There are restorations at Roscoe Village and Piqua. Any of these locations can be an interesting field trip for students after they have studied this investigation.

ACTIVITY A

In this activity students use a map of the drainage basins of Ohio to determine the probable location of two of Ohio's major canal routes.

1-2. Students should logically explain their choice of canal routes. A canal route should guarantee an adequate supply of water and the most gentle gradient available. Generally this will mean that it would need to be located close to a major stream and its major tributaries. The canal route may have to depart from the ideal route to bring it close to the major population centers that it needs to serve.

3. Make a transparency of Appendix A for use on an overhead projector. Then have students draw in the correct canal routes on their maps as you point them out on the transparency.

4. The student's answer should identify major departures of their routes from the actual routes. Reasons for differences should be stated and could include location of other population centers than those considered by the students, water supply, location of drainage divides, stream size, nature of the topography, and the underlying geology of the region. Stop here and discuss the reasons students have suggested for the differences in location of the routes. Some reasons may not be apparent from the map. For example, who was in power in the state legislature when the laws establishing the canals were passed? Where did they live? Often an influencial legislator or perhaps the governor will use political power to get public works in his/her district or home town. This can happen today in locating highways or public buildings. There are other reasons as well that should be pointed out to students. One reason that the western canal did not start in Sandusky is that it would have had to run through Indian lands. It would have been difficult to get the rights to the route and to protect the canal once it was operating.

5. Grand Lake and Buckeye Lake were built to supply water to locks that lifted canal boats over drainage divides.

6. Lake Loramie, Lake Logan, Gulford Lake, Lake Rockwell are all possible water supply reservoirs. However, most of the lakes designated on the map as water reservoirs have been developed since the canal era. Their principal roles are flood prevention and water supply for municipalities.

7. Areas of high relief at the drainage divides were particularly difficult. They required many locks. For example, there were eleven locks built through Akron to lift the boats from the Cuyahoga drainage basin into the Muskingum River Basin.

ACTIVITY B

Using data on population growth and economic activity of selected cities, students study the possible effects of the canals on these same cities. Before starting this part of the activity, have students erase the canal routes on their maps, keeping only the correct ones--those that they drew in for Step 3 of Activity A.

Figure TG 1. Population of selected cities, 1820 (U.S. Bureau of the Census, 1821).

PROCEDURE

Of the cities in Figure 1 of the Student Guide, Cleveland, Columbus, Chillicothe and Portsmouth are all located along the old Ohio-Erie Canal. Cleveland is on the lake and Portsmouth, Marietta and Cincinnati are on the Ohio River. Cincinnati is located at the southern terminus of the Miami-Erie Canal. Mansfield is the only city that has never had any water transportation route available.

1. Chillicothe grew very rapidly between 1830 and 1850 and then its growth rate dropped to a very low point between 1850 and 1860. Chillicothe's growth began to increase because of the opening of the Ohio-Erie Canal in 1832. The development of railroads in Ohio by 1860 and the consequent decrease of trading along the canals may be the cause of the decreased growth rate in the decade 1850-1860.

2. The growth rate of Cleveland accelerated after the opening of the Ohio-Erie Canal in 1832. This high growth rate was sustained after the development of the railroads since Cleveland also became a rail center.

3. Columbus's period of most rapid growth occurred in 1840-1850, after the opening and use of the Ohio-Erie Canal. Being linked to both the Ohio River and Lake Erie by the canal had a large influence on the growth of Columbus during this time period.

4

4. Mansfield is located some distance from a canal. Therefore, although its population showed a rapid growth in 1840-1850, this growth could have been only indirectly affected by the canals.

An extension from the Ohio-Erie Canal was completed along the Muskingum River to Marietta in 1841. It was probably responsible for the spurt in population in Marietta during that decade. Its population growth then leveled off, especially after the development of railroads which tended to bypass Marietta.

5. Cincinnati grew tremendously from 1820-1850, especially in the decade 1840-1850 when the northern part of the Miami-Erie Canal opened and Great Lakes traffic could get to Cincinnati. After 1850, there was a decline in growth rate possibly due to the expansion of the railroads.

6. The purpose of this question is to cause the students to think more deeply about the causes of population change. Some may be local, such as a disaster. Others may be related to natural features--the development of a new resource, such as coal mining or oil production. There are no correct answers. Accept any that seem to be reasonable. Encourage students to think creatively about this question.

7. Cincinnati would send products up the canal toward Troy, as well as downstream on the Ohio. Troy could send products both to Cincinnati and to Toledo.

8. It was certainly used in the containers made in Cincinnati, especially barrels. It would also be used for building and many other purposes.

9. Cincinnati's materials could move up the canal to the Great Lakes system and out to the Atlantic sea coast. Even before the canal opened they could move on the Ohio River, downstream to the Mississippi and New Orleans. New Orleans was the major market for Ohio goods in the early 1800's, but prices paid there were low. Since the Ohio merchants could not return goods upstream, they were forced to accept these low prices. The canal was a real boon to Cincinnati, the Pork Capital of the World, since it opened up the markets on the Atlantic seaboard.

10. Cleveland could send products down the canal as well as both ways on Lake Erie. New Philadelphia probably sent most of its produce toward Cleveland.

11. The grain would be used to make the beer and flour.

12. With the opening of the Erie Canal, Cleveland's products could go east along it through New York State to the Atlantic coast.

13. The canal permitted the shipment of hogs from Troy to Cincinnati for slaughter and packing. Grain could be shipped to Cincinnati for use in making liquor. New Philadelphia could supply Cleveland with wood for use in manufactured goods and farm products for food. The processed materials could, of course, flow back to the points of origin. In this way, cities began to specialize in the types of products that they provided within the economy of Ohio. This gave birth to the great manufacturing centers of Cincinnati, Cleveland, Toledo, Akron and Dayton.

REVIEW QUESTIONS

1. The Ohio-Erie and its feeder canals connected Cleveland, Akron, Newark, Columbus and Portsmouth. The Miami-Erie connected Toledo, Dayton and Cincinnati.

2. Topography, bedrock, availability of water and the location of population centers influenced the location of the canals.

3. Generally those cities located on the canals grew rapidly after the canals reached them.

4. By permitting rapid movement of raw materials, certain cities could specialize in the processing of certain raw material, while others processed different materials.

5. They tied towns into the Ohio and Mississippi river systems and into the Erie Canal system.

BACKGROUND INFORMATION

The growth of cities in Ohio has from the beginning been linked with the accessibility of transportation. By 1820, Cincinnati was the largest city in Ohio. The next largest cities were situated along a roadway called Zane's Trace. (Figure TG 1). In the ensuing decade, cities along the Scioto, Miami and Mad Rivers began to grow as a result of the increased use of these rivers for transportation (Figure TG 2). State routes developed outward from these major cities.

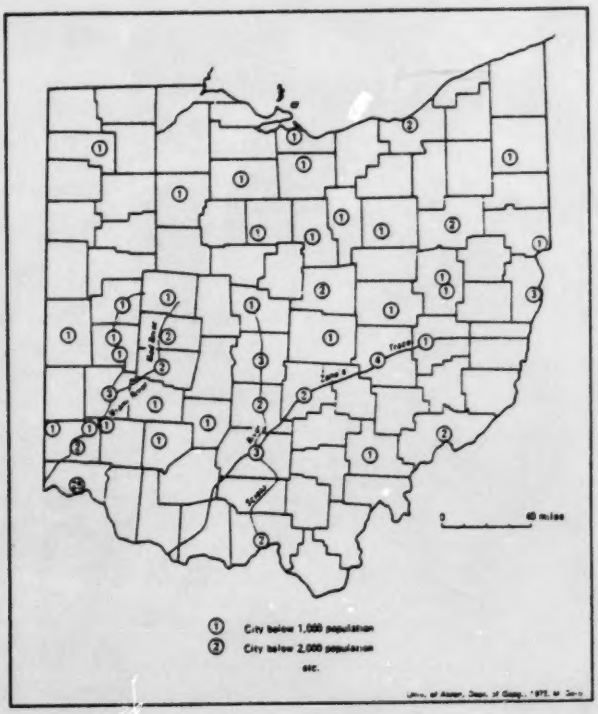

Figure TG 2. Population of Selected Ohio cities, 1830.

The building of the canals in Ohio in the 1830's and 1840's significantly altered the growth patterns of various Ohio cities. The latter half of the 19th century, however, was dominated by railroads. Railroads were originally built to reach areas not reachable by the canals, but it became apparent that railroads could favorably compete with the canals. Toledo became a major railroad center and also became the third largest Ohio city by 1900. Along with railroad development was industrialization. The rise in importance of the truck and automobile led to the development of the modern highway systems and patterns of growth that we experience today.

As the boats moved slowly along the canals, the canallers spent much of their idle time singing. Some of these songs have been preserved. They tell much about canal life, such as the one entitled "The Old Canal." You might encourage some of your more musically inclined students to sing this ballad to the class. One song from the Ohio Historical Society publication titled Scenes and Songs of the Ohio-Erie Canal is included on page 7.

THE OLD CANAL

There's a lit-tle sil-ver rib-bon runs a-cross the Buck-eye State, 'Tis the
dear-est place of all this earth to me, For up-on its pla-cid sur-face I was
born some years a-go And its beau-ty, grand-eur, al-ways do I see.
Cleveland is the north-ern end and Ports-mouth is the south, While its
side cuts they are man-y, ma-ny, Pal And where e'er we went we took a-long our
CHO:
Home Sweet, Home, you know, In those bal-my days up-on the old ca-nal There's
naught in all cre- a- tion that to this can com- pare Good
3
times, rounds of plea-sure were our lot dear Pal, No oth-er peo-ple e'er were known to
have such times as we, In those bal-my days up- on the old ca- nal.

THE OLD CANAL

My dear friend was forty feet from bank to bank, you know;
Twenty-six at bottom, depth not less than four;
Two feet above the water line, and never more than five,
Towpath, ten feet wide, six inches draft, no more.
'Twas always on the lower side of channel, outward pitch.
Clearance fifteen feet, oft twenty more, dear Pal;
Thus making safe our every move from whatever come
We had elbow room along the old canal.

The locks were fifteen in the clear and ninety foot in length,
Six to twelve foot lift, you'll find this all along.
The boats were most beautiful, so fairy-like, you know.
How they'd blend and serenade in sweetest song!
Our boats, fourteen by eighty feet and eighty tons their load,
But no people had such times as we, dear Pal,
Our fairy palaces were so charming everywhere we went
In those matchless days upon the old canal.

The locks were so majestic, vineclad, overhanging trees,
Moss and flowers in profusion everywhere;
The song of laughing water rippling and the tumble roar,
Nature smiling everything without a care.
The birds would join in chorus, katydids and crickets too,
Whippoorwills, owls, frogs their parts would play, dear Pal,
The fish in schools would jump and keep our hooks so bright and nice,
It was great to be upon the old canal.

And now whene'er I hear someone reproach or speak unkind
Of this grand old sire, I know they're not informed,
For behold! the towns and cities that are standing on his shores,
Were it not for him they never would be borned.
"He has outlived his usefulness," O this I've heard some say,
They have forgotten, the old man betrayed.
I know there's much that he could do and gladden many hearts
If he only had a half a chance today!

Those famous days were pleasant and in fancy I reflect,
See her boats and packets two thousand and more,
Her shipyards, drydocks, warehouses and many other things
That were needed, all were standing on her shores.
I know my love for her is true, God grant it ne'er shall change!
For most pleasant is her memory, O Pal.
When I check in, O may I rest in peace for evermore
On the shore of my dear friend, the old canal!

These stanzas are selected from the 80 stanzas of the song which describes the canal from the northern end to the southern. There is some comment about virtually every town, lock, store, mill, or mine along the way. Captain Nye considered this song his "Masterpiece." There is a wealth of information in it.

From Scenes and Songs of the Ohio-Erie Canal, Ohio Historical Society.

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Noble, A.G. and Korsak, A.S., 1975, Ohio--An American Heartland, Ohio Geological Survey, Bulletin 65, illustrated, 230 pgs.

Wilcox, Frank N., 1969, The Ohio Canals, William A. McGill, ed., The Kent State University Press, illustrated, 106 pgs.

Ohio Historical Society, Canals of Ohio, a leaflet and map available from the Society, Columbus, Ohio 43221.

The Big Ditch, Jim Baker's Historical Handbook Series available from the Ohio Historical Society. An illustrated history of the Ohio Canals.

The Ohio Historical Society, Scenes and Songs of the Ohio-Erie Canal. Pictures and descriptions of various aspects of the canals and several songs that were sung on the canal boats. Available from the Society.

EVALUATION ITEMS

1. Why was the Ohio canal system built?

   1. To provide drinking water to towns in the interior of the state.
   *2. To make easier the movement of people and products from place to place.
   3. To allow fish to travel from Lake Erie into the interior of Ohio for use as a foodsource.
   4. Congress passed a law creating canals.

2. Before the canals were built, flour sold for $1.95 a barrel in Ohio and $8.00 in New York City. The reason for such a difference was

   1. people in New York City used more flour so a higher price could be charged for it.
   2. the flour sold in New York City was a better type.
   *3. Ohioans couldn't get their flour out of the state so they had to settle for a lower price.
   4. the people that lived in New York City were richer than Ohioans and could pay more for flour.

3. A major factor in determining the location of a canal was

   1. the location of major highways.
   *2. location of major cities.
   3. location of railroads.
   4. none of the above.

4. Which of the following cities was not on the Ohio-Erie Canal?

   1. Cleveland
   2. Columbus
   *3. Dayton
   4. Portsmouth

5. Which of the following cities were connected by the Miami-Erie Canal?

*1. Toledo, Dayton and Cincinnati
2. Cleveland, Columbus and Portsmouth
3. Toledo, Columbus and Cleveland
4. Dayton, Cincinnati and Akron

6. During the 1840-1850 decade, Cincinnati experienced a population increase of about 150%. One reason for this growth in population is

1. people along the Ohio River were evacuated to Cincinnati.
2. the railroads were connected from Cincinnati to St. Louis.
*3. the Miami-Erie Canal was completed.
4. many people moved out of New York to Ohio.

7. The canal system helped the people of the cities along the canal to ship their products to

1. the other cities along the canal.
2. other states.
3. foreign countries.
*4. all of the above.

8. After 1860, the use of canals in Ohio began to decline. The major reason for this was

1. the Civil War.
*2. the expansion of railroads.
3. a drought that caused the water in the canals to disappear.
4. a surplus of farm products in New York and other eastern states.

9. A number of large reservoirs, such as Buckeye Lake, were constructed along each of the canals. Their major purpose was to

*1. supply water for the canals.
2. provide "parking places" for canal boats.
3. provide drinking water for cities along the canal.
4. supply water power to industries located on the canals.

10. The opening of the canals changed industry in Ohio because

*1. the easy movement of materials on the canals allowed towns and cities to specialize in certain industries.
2. the canals provided industries with a place to dump liquid waste products, thereby reducing their costs of production.
3. the canals provided a source of water power used by industry.
4. the canals provided water to industries.

LAKE ERIE
Toledo
Waterville
Maumee
Grand Rapids
Napoleon
Maumee River
Defiance
MIAMI AND ERIE
Maumee River
Junction
WABASH AND ERIE
Auglaize River
MIAMI AND ERIE
Delphos
Spencerville
Grand Lake St. Marys
St. Marys
Indian Lake
Lake Loramie
Sidney
Great Miami River
Lockington
Piqua
Troy
Tipp City
Stillwater River
MIAMI AND ERIE
Dayton
WARREN COUNTY
Middletown
Lebanon
Great Miami River
Hamilton
Harrison
North Bend
CINCINNATI AND WHITEWATER
Cincinnati
OHIO RIVER
Huron
MILAN
Milan
Sandusky River
Cleveland
Cuyahoga River
PENNSYLVANIA AND OHIO
Warren
Youngstown
Ravenna
Kent
OHIO AND ERIE
Akron
Portage Lakes
Canal Fulton
Tuscarawas River
Massillon
Bolivar
Canal Dover
Walhonding River
WALHONDING
Roscoe
Coshocton
Brinkhaven
Mohican River
Hanoverton
Lisbon
East Liverpool
SANDY AND BEAVER
Dresden
Muskingum River
Zanesville
Granville
Newark
Buckeye Lake
Olentangy River
Columbus
Scioto River
Lockbourne
Carroll
Lancaster
Circleville
Logan
OHIO AND ERIE
HOCKING VALLEY
Nelsonville
Athens
Chillicothe
Waverly
Scioto River
Portsmouth
MUSKINGUM IMPROVEMENT
McConnelsville
Marietta
OHIO RIVER
CANALS OF OHIO
1825-1913
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